

Adding / Subtracting Fractions with the same denominator

Method: Add / Subtract the numerators

Put your answer over the denominator

$$\text{Eg 1)} \quad \frac{2}{7} + \frac{3}{7} \Rightarrow \frac{2+3}{7} \quad \text{Ans} = \frac{5}{7}$$

C/W Pg 60 Q1 + 2

Adding/Subtracting fractions with Different Denominators

① Adding

$$\frac{A}{B} + \frac{C}{D} = \frac{\overset{\text{multiply}}{\downarrow} AD + \overset{\text{multiply}}{\uparrow} BC}{BD}$$

$$\begin{aligned} \text{Eg } \frac{1}{3} + \frac{1}{2} &= \frac{(1)(2) + (3)(1)}{3(2)} \\ &= \frac{2 + 3}{6} \end{aligned}$$

$$\text{Ans} = \frac{5}{6}$$

C/W pg 60 Q3.

② Subtract

$$\frac{A}{B} - \frac{C}{D} = \frac{\overset{\text{multiply}}{\downarrow} AD - \overset{\text{multiply}}{\uparrow} BC}{BD}$$

$$\begin{aligned} \text{Eg } \frac{2}{3} - \frac{1}{4} &= \frac{(2)(4) - (3)(1)}{3(4)} \\ &= \frac{8 - 3}{12} \end{aligned}$$

$$\text{Ans} = \frac{5}{12}$$

ADD / SUBTRACT THREE FRACTIONS

Eg 1) $\frac{1}{3} + \frac{2}{5} + \frac{1}{15}$

LOWEST COMMON DENOMINATOR
of 3, 5, 15 = 15

multiply the numerator by the LCD

$$\frac{1(\cancel{15})^5}{3} + \frac{2(\cancel{15})^3}{5} + \frac{1(\cancel{15})^1}{15}$$

Simplify

$$\frac{5 + 6 + 1}{15} = \frac{12}{15} \div 3 = \frac{4}{5}$$

Simplest form

Q4(iv)

Eg 2)

$$\frac{2}{9} + \frac{1}{3} + \frac{1}{6}$$

Multiples

$$9 = 9, 18$$

$$3 = 3, 6, 9, 12, 15, 18$$

$$6 = 6, 12, 18$$

LCD = 18

Page 60 Q4 ii, iii

Simplify

$$\frac{2(\cancel{18})^2}{9} + \frac{1(\cancel{18})^6}{3} + \frac{1(\cancel{18})^3}{6}$$

$$\frac{4 + 6 + 3}{18} = \frac{13}{18}$$

Q4ii)

$$\frac{3}{8} + \frac{1}{6} + \frac{2}{3}$$

$$8 = 8, 16, \textcircled{24}$$

$$6 = 6, 12, 18, \textcircled{24}$$

$$3 = 3, 6, 9, 12, 15, 18, 21, \textcircled{24}$$

$$\text{LCD} = 24$$

Multiply the
numerator by
the LCD

$$\frac{3 \textcircled{(24)}^3}{8} + \frac{1 \textcircled{(24)}^4}{6} + \frac{2 \textcircled{(24)}^8}{3} \text{ Simplify}$$

$$= \frac{3 \times 3 + 1 \times 4 + 2 \times 8}{24}$$

$$= \frac{9 + 4 + 16}{24}$$

$$= \frac{29}{24}$$

4 iii)

$$\frac{5}{12} + \frac{3}{4} + \frac{1}{3} \quad \text{LCD} = 12$$

$$\frac{5(\cancel{12})^1}{12} + \frac{3(\cancel{12})^3}{4} + \frac{1(\cancel{12})^4}{3}$$

$$\frac{5 + 9 + 4}{12}$$

$$\frac{18}{12} = \frac{3}{2} \text{ or } 1\frac{1}{2}$$

Test tomorrow

Adding + Subtracting
fractions